

WE CLAIM:

1. A method for improving stain resistance of a plastic washing machine component comprising:
 - placing the plastic washing machine component in a reaction chamber;
 - introducing a gas mixture containing fluorine and oxygen into the reaction chamber; and
 - reacting the gas mixture with the plastic washing machine component within the reaction chamber until the gas mixture modifies at least a surface layer of the plastic washing machine component to make the plastic washing machine component more resistant to staining.
2. The method according to claim 1, wherein the plastic washing machine component is molded of polypropylene.
3. The method according to claim 1, further comprising: retaining the plastic component in the reaction chamber with the gas mixture for about 0.5-60 minutes.
4. The method according to claim 1, further comprising: establishing a fluorine content at less than 10% of the gas mixture, by volume.
5. The method according to claim 4, further comprising: establishing a fluorine content less than or equal to 5% of the gas mixture, by volume.
6. The method according to claim 1, further comprising: providing nitrogen in the gas mixture.

7. The method according to claim 1, further comprising: penetrating the plastic component with the gas mixture to about 1000 angstroms.
8. The method according to claim 1, further comprising: utilizing the plastic washing machine component to form a dishwasher.
9. The method according to claim 8, further comprising: employing a dishwasher tub as the plastic washing machine component.
10. The method according to claim 8, further comprising: employing a dishwasher door liner as the plastic washing machine component.
11. The method according to claim 8, further comprising: employing a dishwasher spray arm as the plastic washing machine component.
12. The method according to claim 1, further comprising: maintaining the reaction chamber at a temperature of approximately 30-70°C.
13. The method according to claim 1, further comprising: establishing a pressure of approximately 0.1-0.9 atmospheres in the reaction chamber.
14. A washing machine having internal components with improved resistance to stains comprising:
 - a first washing machine component defined by a tub;
 - a second washing machine component defined by a door movable between an open position, wherein access to within the tub is permitted, and a closed position, wherein a washing chamber is established by the tub and door; and

a third washing machine component arranged with the washing chamber, at least one of the first, second and third washing machine components being formed from a plastic material and having a surface, exposed to the washing chamber, which has been treated with a fluorine containing gas mixture such that the surface has been modified to enhance a resistance thereof to staining.

15. The washing machine according to claim 14, wherein the plastic material is polypropylene.

16. The washing machine according to claim 14, wherein the at least one of the first, second and third components constitutes the tub.

17. The washing machine according to claim 14, wherein the at least one of the first, second and third components constitutes an inner liner of the door.

18. The washing machine according to claim 14, wherein the at least one of the first, second and third components constitutes a dishwasher spray arm.

19. The washing machine according to claim 14, wherein the surface has been modified to a thickness of approximately 2000 angstroms.

20. The washing machine according to claim 14, wherein the surface of the at least one of the first, second and third components has also been modified to enhance characteristics of drying performance by being treated with the fluorine containing gas mixture.